

information site **100**. At **816**, upon receipt of one such notifications, current visitor manager **408** determines if the notification is about an information page request or about the departure of a current visiting user.

If it is about an information page request, current visitor manager **408** determines if the request is being made by a new visiting user, **818**. In one embodiment, the determination is made by examining the network address of the requesting client computer, against the network addresses of the current visiting users. If a match is found, current visitor manager **408** takes no action, and continues at **814**. On the other hand, if the request is made by a new visiting user, current visitor manager **408** creates a new current visitor record in current visitor list **410**, including at least the current visitor's network address, **820**. In alternate embodiments, additional information may also be collected and kept about the current visitors, and continues at **814**.

Back at **816**, if the notification is about the departure of a current visiting user, current visitor manager **408** deletes the corresponding current visitor record of the departed visiting user from current visitor list **410**, **822**. Upon deletion, current visitor manager **408** continues at **814**.

Referring now to **Figs 9a-9b**, wherein two block diagrams illustrating the operational flow of chat session manager **412**, and the end-user interface of a chat session **414**, in accordance with one embodiment, are shown. As illustrated, at **912**, upon start-up, chat session manager **412** awaits requests from the "initiate" scripts/applets and chat messages/commands from a chat session participant. It should be noted that chat messages may be text, voice, or multi-media (although only text is illustrated in **Fig. 9a**). At **914**, chat session manager **412** determines if the received item is a request or a message/command.

Upon receipt of an "initiate" request, at **916**, chat session manager **412** polls all other current visitors, presenting them with the descriptions describing the initiating user as well as his/her interest. In one embodiment, chat session manager **412** polls current visitors who are already participating in an earlier formed chat session by posting the question through the chat session. At **918**, upon expiration of a predetermined reply interval, chat session manager **412**

determines if at least one current visitor has consented to chat with the initiating user. If none has consented, chat session manager 412 informs the initiating user accordingly, 920. If at least one consent is a current chat participant, chat session manager 412 adds the initiating user to an appropriate one of the earlier formed chat sessions, 924. As described earlier, if the consent users are already participants of multiple chat sessions, the initiating user may be prompted to select which one he/she wants to join; alternatively, the consenting users may be prompted for merging the chat sessions. Also, a tie breaking scheme, e.g. by weight and so forth, may also be employed instead to automatically decide which earlier formed chat session is the appropriate chat session if chat participants of more than one chat session gave their consents. If at least one other visiting user consented, but none are current chat participants, chat session manager 412 allocates the appropriate resources (memory space, etc.) and dynamically forms a chat session for the initiating and consenting users, 926. Chat session manager 408 keeps tracks of all the chat sessions and their participants.

Upon receipt of a chat message/command from a participant of a chat session, at 928, chat session manager 412 determines if it is a message or command. If it is a message, at 930, chat session manager 412 identifies all other participants of the chat session, and sends the chat message to the identified participants, as in prior art. Similarly, if it is a command, e.g. "quit", at 932 chat session manager 412 handles them accordingly, as in prior art. In particular, if it is a "quit" command, and the transmitting participant is the last participant, chat session manager 412 terminates the chat session.

Thus, it can seen from the above description, under the present invention, a user may enjoy improved chat experience that is more closer to his/her real life experience. The user may freely strike up conversations with other users of interest at any information site, as he/she "cruises" on the "information superhighway". The user is not limited to pre-formed chat sessions that the user has pre-registered, and chatting only at schedule times, which may or may not be convenient for the user.

Referring now to **Figure 10**, wherein a block diagram illustrating an overview of the present invention in accordance with another embodiment is shown. Similar to the embodiment of **Fig. 1**, client computers **1002**, **1004** and **1006**, and information sites **1000a** and **1000b** are coupled to one another through network **1008**. Users **1012**, **1014** and **1016** using client computers **1002**, **1004** and **1006** visit information site **1000a** and/or **1000b**, and peruse information pages **1018a** and/or **1018b**, through network **1008**. However, unlike the embodiment of **Fig. 1**, third party chat server **1020** is also coupled to the above enumerated elements through network **1008**. It is third party chat server **1020** that is equipped with the "primary" elements to enable a chat session to be dynamically formed on-demand between all or a subset of users **1002**, **1004** and **1006**, through which they chat with each other.

In other words, third party chat server **1020** is equipped with the equivalents of the earlier described current visitor manager, current visitor list, chat session manager and chat sessions, performing the same functions (except it is on behalf of the visitors of information sites **1000a-1000b**) as described earlier. In one embodiment, the polling is limited to "related" sites only. What constitutes "related" is application dependent, and may be established in accordance with any policies or heuristics.

For the illustrated embodiment, information sites **1000a-1000b** are continued to be equipped with the operating system, the information server, the information pages, and the equivalents of the associated scripts/applets, in particular, equivalents of the "initiate", "describe" and "monitor/report" scripts/applets, performing the same functions as described earlier. Except in this embodiment, each information sites **1000a/1000b** is further equipped with a notification function for information site **1000a/1000b** to notify third party chat server **1020** of its visitors. Furthermore, the "initiate" script/applet is designed to transmit the initiation request along with the descriptions to third party chat server **1020** instead. Similarly, the "monitor/report" script/applet is designed to transmit the departure notification to third party chat server **1020** instead.

In an alternate embodiment, client computers **1002-1004** are pre-provided (e.g. by third party chat server **1020**) with equivalents of the "initiate", "describe" and "monitor/report" scripts/applets, performing the same functions

as described earlier. Except in this embodiment, in addition to departure, "monitor/report" also reports to third party chat server **1020** which information site the user is visiting, as the user arrives at the site. In like manners, the "initiate", "describe" and "monitor/report" scripts/applets are all designed to transmit their data to third party chat server **1020**.

As with the embodiment of **Fig. 1**, in a presently preferred variation of this embodiment, pre-registration by users **1012**, **1014** and **1016** as well as logging-in are unnecessary. Users **1012**, **1014** and **1016** are just any ordinary users visiting information sites **1000a** and/or **1000b**. As a result, the chatting experience of users **1012**, **1014** and **1016** is even further improved, as in addition to being able to chat with visiting users of the same information site, users **1012**, **1014** and **1016** may be able to chat with visiting users of a "community" of sites (however, community may be defined in an application dependent manner), and yet the chatting may be accomplished independent of the "community" of sites, i.e. without their participation. Note that under this embodiment, users **1012**, **1014** and **1016** may even be chatting with each other, as they move from site to site among the "community" of sites. The coordinated movement among the sites may be effectuated by simply notifying each other through the chat sessions, or through additional scripts/applets, automatically "stuffing" the new site destination into e.g. the browser of each user's client computer.

Similar to the embodiment of **Fig. 1**, it should be noted that while for ease of understanding, only users **1012**, **1014** and **1016**, information sites **1000a-1000b**, and third party chat server **1020** are illustrated, the present invention may be practiced with any number of users, information sites, and third party chat servers, limited only by the processing capacity and bandwidth of these elements and network **1008**.

Thus, methods and apparatuses for facilitating a novel approach to on-line chatting have been described. While the present invention has been described in terms of the above illustrated embodiments, those skilled in the art will recognize that the invention is not limited to the embodiments described. The present invention can be practiced with modification and alteration within

the spirit and scope of the appended claims. For example, the present invention may also be practiced with additional features such as a "friends list" similar to the "friend list" feature known in the art of instant messaging. The description is thus to be regarded as illustrative instead of restrictive on the present invention.

CLAIMS

What is claimed is:

1. An on-line chatting method comprising:
facilitating visit by a first on-line user to an information page of an information site;
facilitating dynamic formation of a chat session for said first on-line user and a second on-line user to chat with each other; and
facilitating said chat session through which said first and second on-line users chat with each other.

2. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises providing a mechanism to said first on-line user to initiate formation of said chat session.

3. The method of claim 2, wherein said provision of a mechanism to said first on-line user to initiate formation of said chat session comprises providing a selectable icon for said first on-line user to indicate the first on-line user's desire to chat with another on-line user.

4. The method of claim 3, wherein said provision of a mechanism to said first on-line user to initiate formation of said chat session further comprises providing one or more dialog panels for said first on-line user to specific one or more descriptive characteristics of said first on-line user.

5. The method of claim 4, wherein the one or more descriptive characteristics include descriptive characteristic(s) selected from a group of descriptive characteristics consisting of a demographic characteristic and an interest characteristic.

6. The method of claim 3, wherein said provision of a mechanism to said first on-line user to initiate formation of said chat session further comprises

providing one or more dialog panels for said first on-line user to specific one or more descriptive characteristics of said other on-line user.

7. The method of claim 6, wherein the one or more descriptive characteristics include descriptive characteristic(s) selected from a group of descriptive characteristics consisting of a visit destination characteristic, a demographic characteristic, and an interest characteristic.

8. The method of claim 3, wherein said provision of a selectable icon comprises providing an icon in one of a selected one of a plurality of manifestations corresponding to a plurality of current visitation traffic levels of a selected one of said information site and said information page.

9. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises inquiring a plurality of other on-line users, including said second on-line user, to determine if any of said other on-line users is interested in chatting with said first on-line user.

10. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises asking the first on-line user to select a chat session from a plurality of previously dynamically formed chat sessions being participated by a plurality of other on-line users consenting to chat with the first on-line user, including said second on-line user.

11. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises asking a plurality of other on-line users consenting to chat with the first on-line user to consent to merge previously dynamically formed chat sessions the consenting other on-line users are participating.

12. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises applying a tie breaking scheme to automatically select a chat session from a plurality of previously dynamically formed chat

sessions being participated by a plurality of other on-line users consenting to chat with the first on-line user, including said second on-line user.

13. The method of claim 1, wherein said facilitating of dynamic formation of a chat session comprises maintaining visitation status records of said first and second on-line users.

14. The method of claim 1, wherein said facilitating of visit by said first on-line user to an information page of an information site comprises providing a mechanism to facilitate detection of said first on-line user leaving said information site.

15. The method of claim 1, wherein said facilitating of visit by said first on-line user to an information page of an information site comprises informing a chat server of said first on-line user's visit to said information site.

16. The method of claim 1, wherein said second on-line user is also visiting at least said information site.

17. The method of claim 1, wherein said method further comprises facilitating visit by said first on-line user to an information page of another information site, while continuing to facilitate said chat session.

18. The method of claim 17, wherein said method further comprises facilitating visit by said second on-line user to the same information page of said other information site, while continuing to facilitate said chat session.

19. An information server comprising:
a plurality of information pages to be selectively provided to a client computer responsive to the client computer's request; and
a first script/applet to be included with a responsive information page to enable the client computer to initiate dynamic formation of a chat session for a

user of the client computer to chat with a second user of interest, also visiting the information server.

20. The information server of claim 19, wherein said information server further comprises a second script/applet to be included with the responsive information page to enable the user of the client computer to describe a selected one of the user himself/herself and other users of interest.

21. The information server of claim 19, wherein said information server further comprises a second script/applet to be included with the responsive information page to enable the client computer to monitor and report the user leaving the information server.

22. The information server of claim 19, wherein said information server further comprises a current visitor manager to maintain a list of current visitors of the information server.

23. The information server of claim 19, wherein said information server further comprises a chat session manager to dynamically form and maintain said chat session.

24. A chat server comprising:
a current visitor manager to maintain a list of current visitors of a plurality of information servers; and
a chat session manager to dynamically form and maintain chat sessions for selected ones of said current visitors of said information servers.

25. The information server of claim 24, wherein the current visitor manager includes logic for creating a current visitor record when a visitor visits a first of the information servers, and logic for deleting the current visitor record when the visitor is no longer visiting any of the information servers.

26. The information server of claim 24, wherein the chat session manager includes logic for inquiring a plurality of visitors to determine if any of said other visitors is interested in chatting with an initiating visitor wanting to chat with other visitors of interest.

27. The information server of claim 24, wherein the chat session manager includes logic for asking an initiating visitor to select a chat session from a plurality of previously dynamically formed chat sessions being participated by a plurality of other visitors consenting to chat with the initiating visitor.

28. The information server of claim 24, wherein the chat session manager includes logic for asking a plurality of other visitors consenting to chat with an initiating visitor to consent to merge previously dynamically formed chat sessions the consenting other visitors are participating.

29. The information server of claim 24, wherein the chat session manager includes logic for applying a tie breaking scheme to automatically select a chat session from a plurality of previously dynamically formed chat sessions being participated by a plurality of visitors consenting to chat with an initiating visitor.

30. A client computer comprising:

a first script/applet to enable the client computer to monitor and report to a third party chat server visits by the client computer to information servers;

a second script/applet to enable the client computer to initiate dynamic formation of a chat session for a user of the client computer to chat with a second user of interest visiting one of the information servers.

31. The client computer of claim 30, wherein said client computer further comprises a third script/applet to enable the user of the client computer to describe a selected one of the user himself/herself and other users of interest.

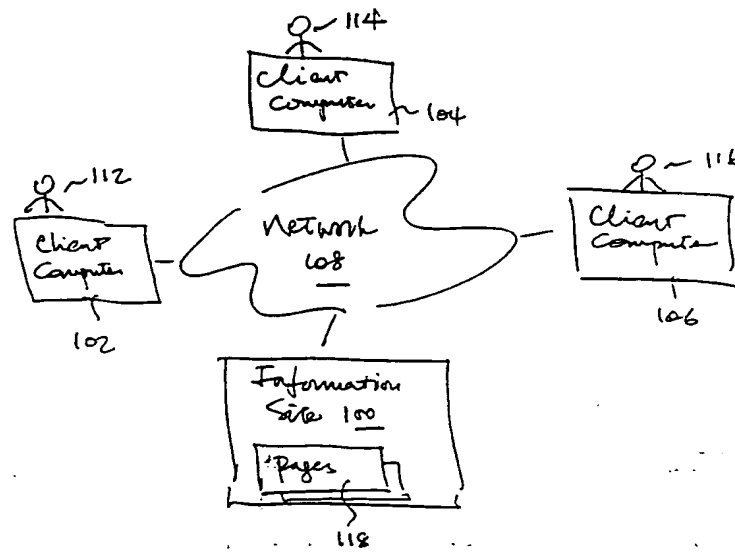


FIG. 1

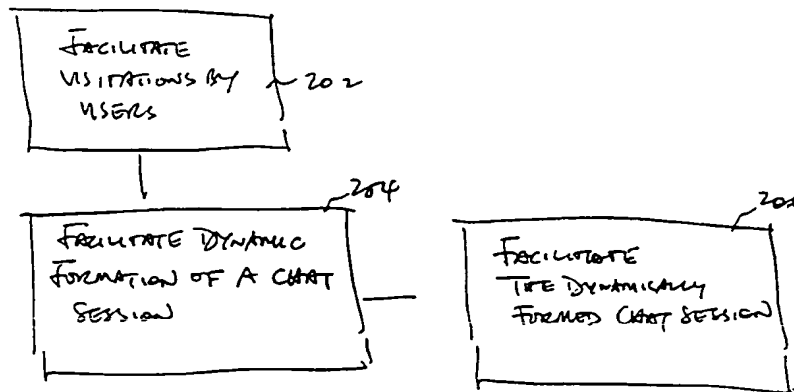


FIG. 2

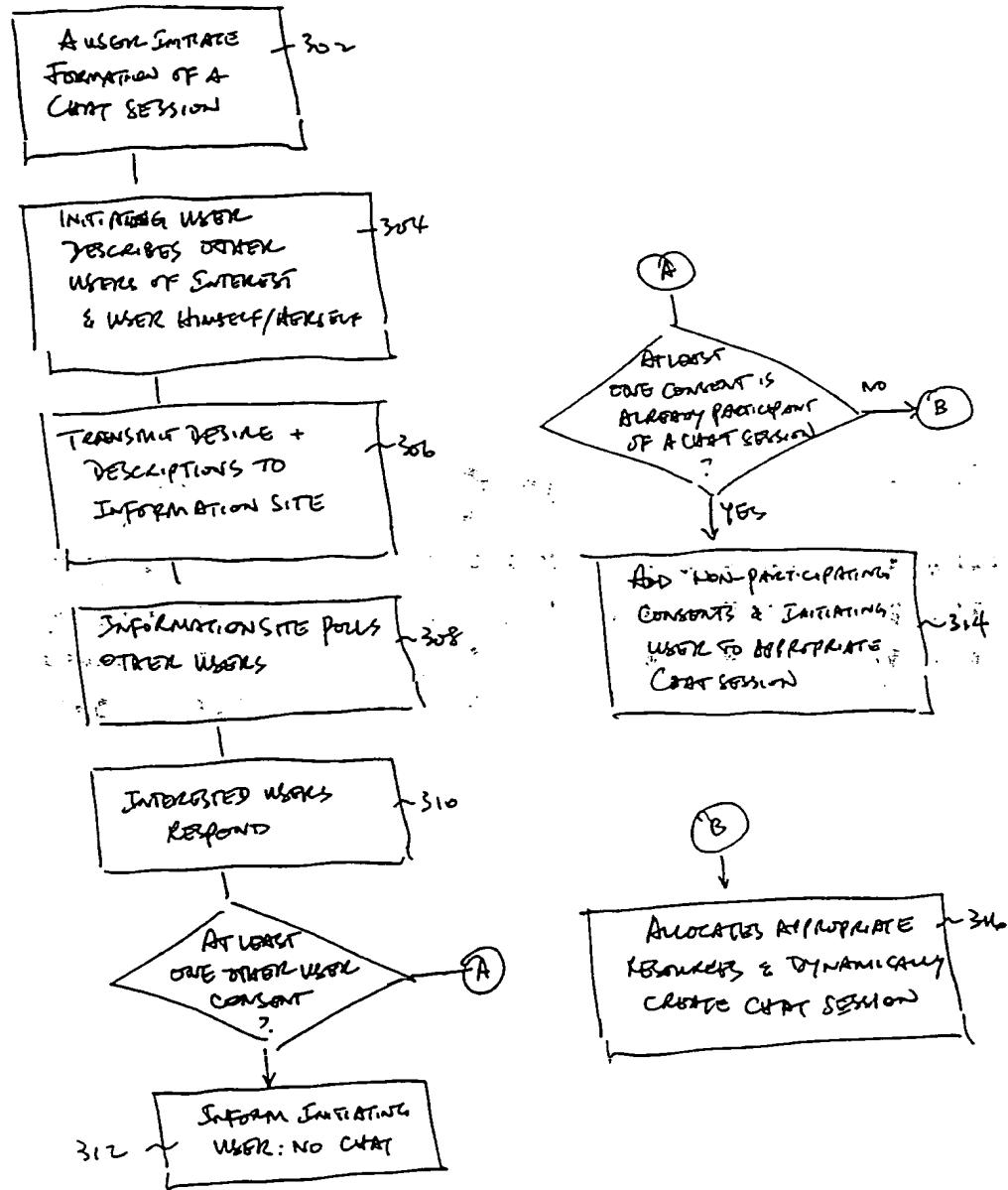


Fig. 3

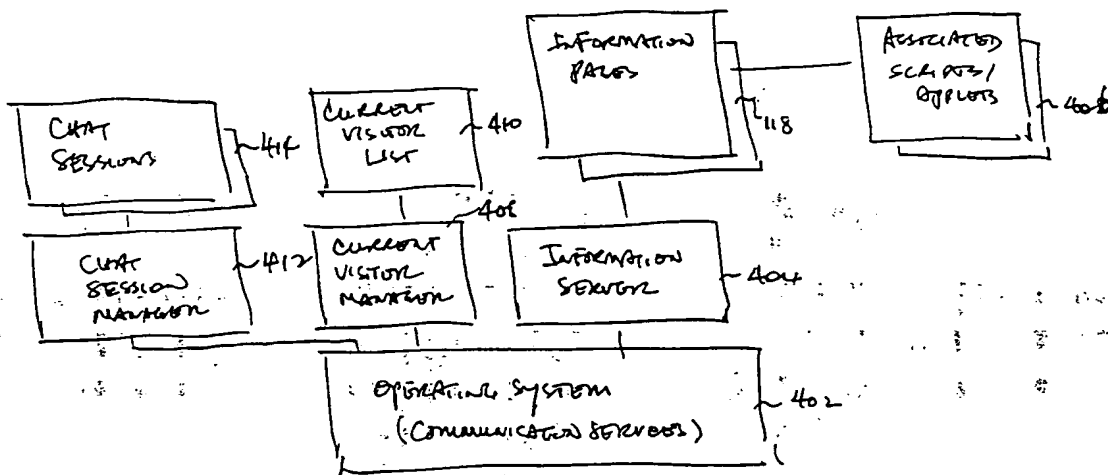


Fig. 4

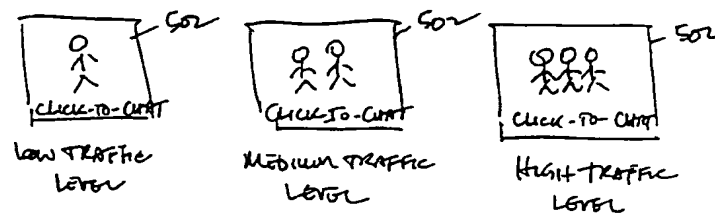


FIG. 5a

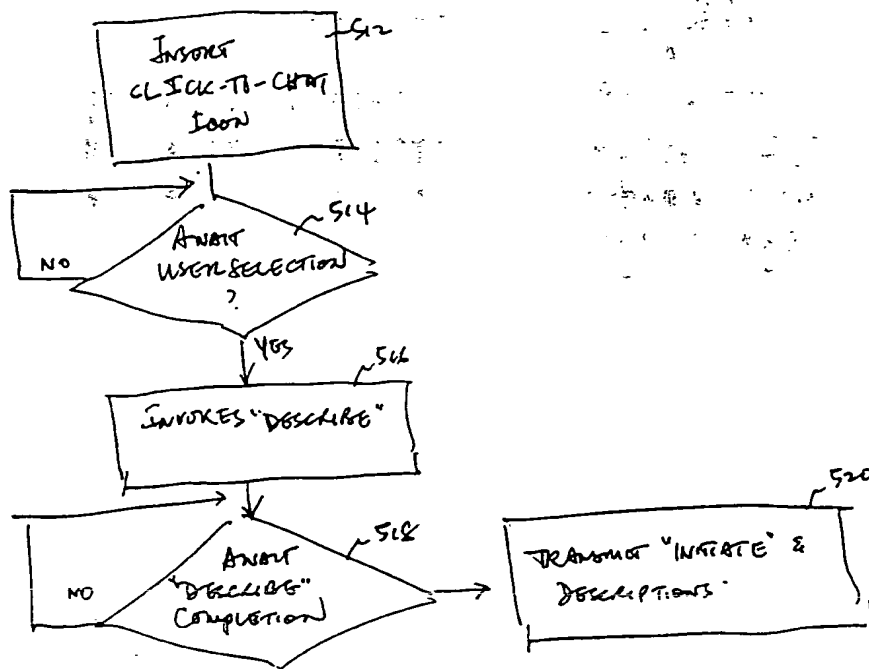


FIG. 5b

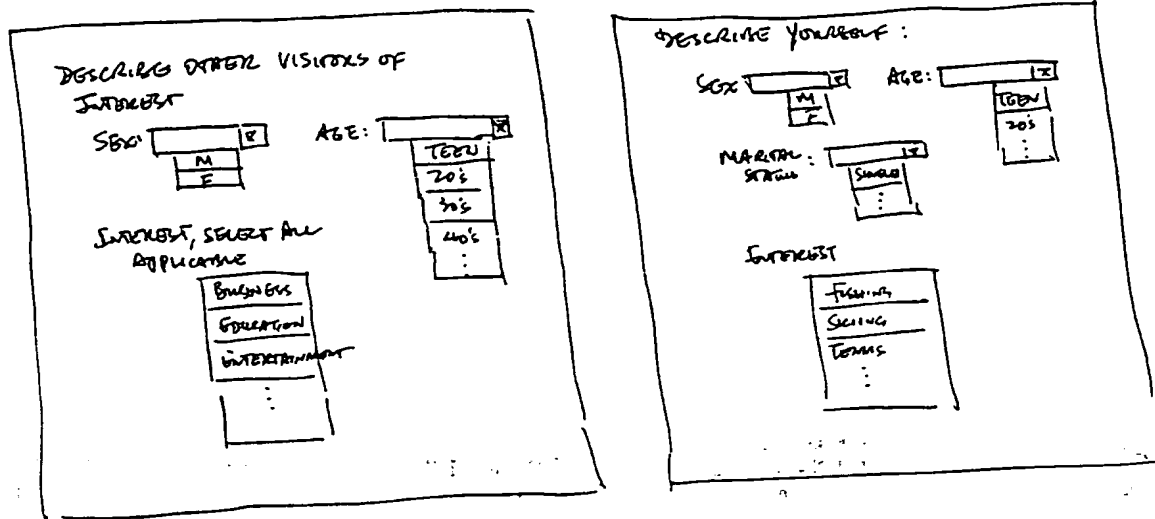


FIG. 6a

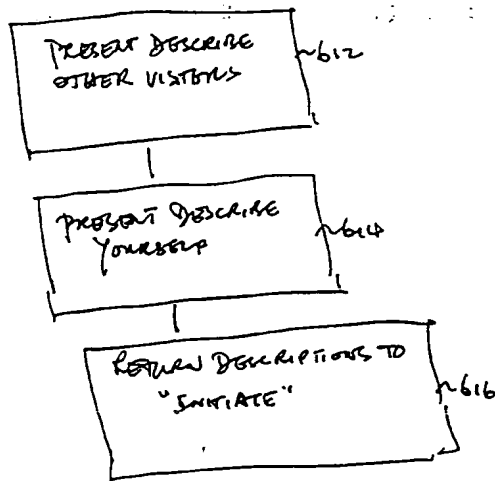


FIG. 6b

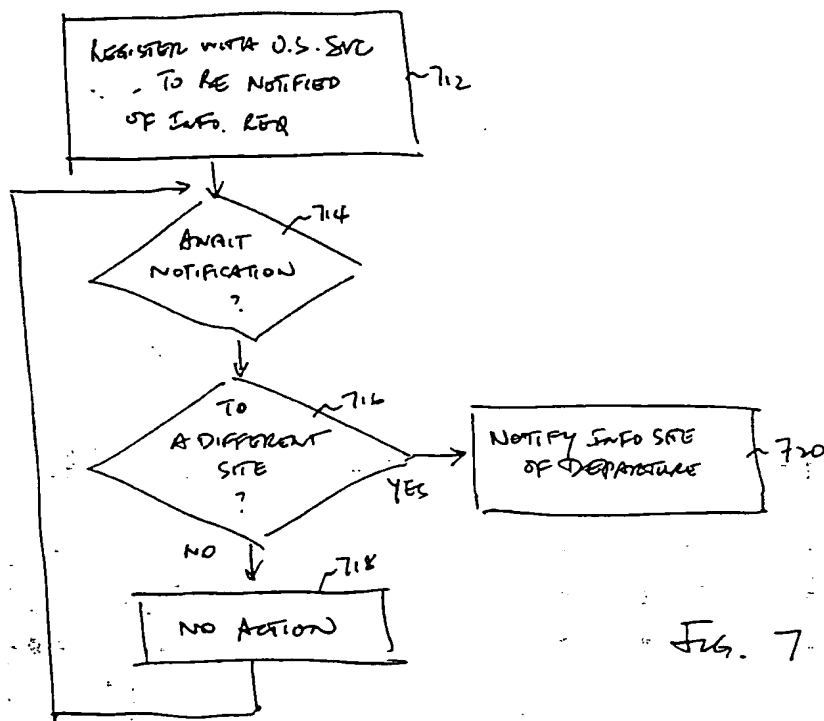


Fig. 7

CURRENT VISITOR LIST

NETWORK ADDRESSES	visitor IPI
⋮	⋮

~410

Fig. 8a

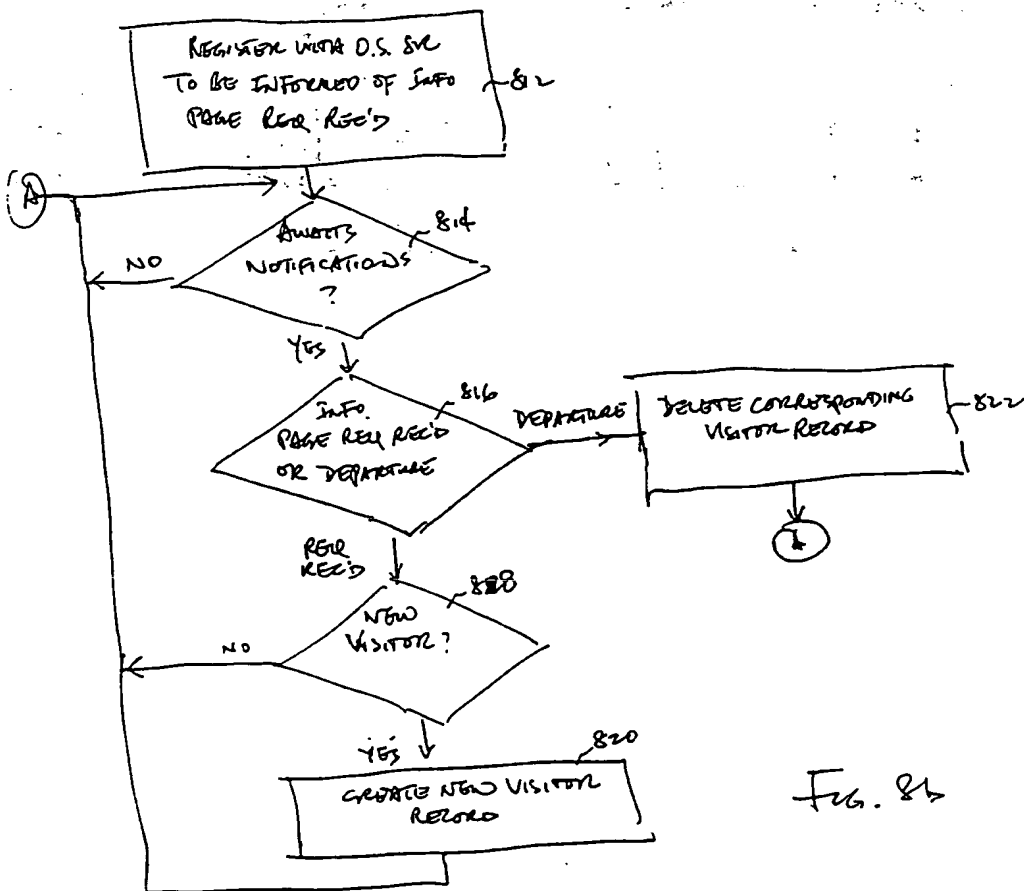


Fig. 8b

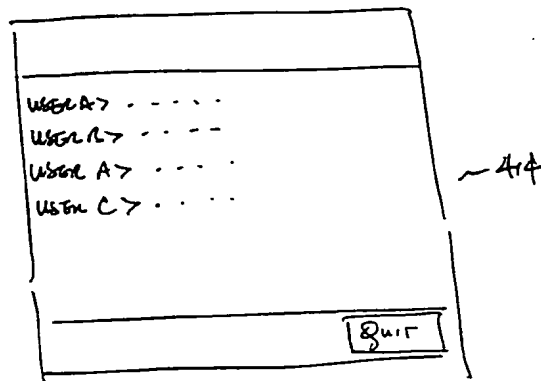


Fig. 9a

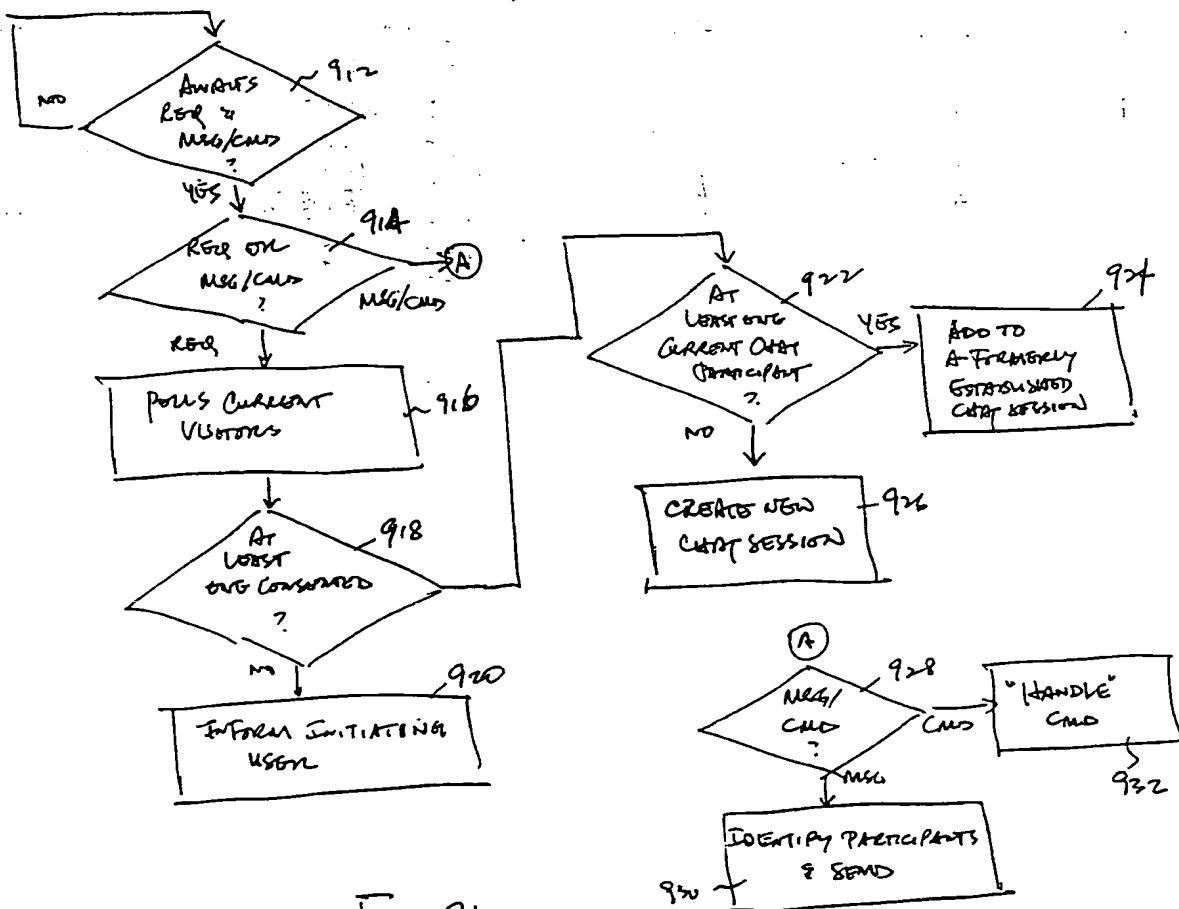


Fig. 9b

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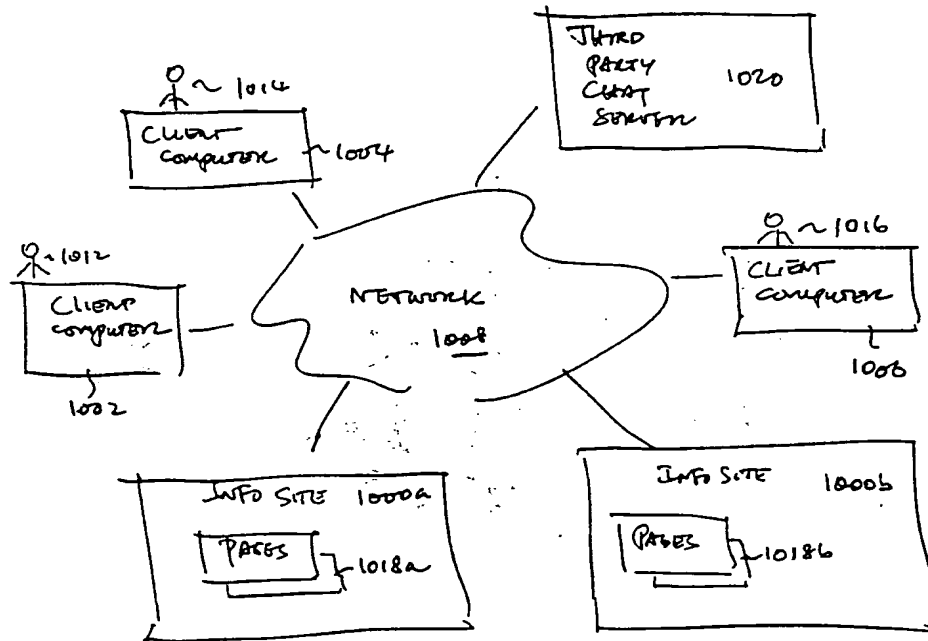


FIG. 10

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/26856

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60 H04L29/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04L G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, IBM-TDB, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"Odigo beta 0.97" HELP FILE, 'Online! - XP002160542 Retrieved from the Internet: <URL:http://www.canalnatural.com.br/download/files/odigo.exe> 'retrieved on 2001-02-15! the whole document	1-9, 13-26, 30,31
X	"Goovey 1.0 beta" HELP FILE, 'Online! - XP002160543 Retrieved from the Internet: <URL:http://www.agscape.com/goovey/goovey10.exe> 'retrieved on 2001-02-15! the whole document	1-9, 13-26, 30,31

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

16 February 2001

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02/03/2001

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/26856

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>WALTHER M: "Supporting development of synchronous collaboration tools on the Web with GroCo"</p> <p>PROC. OF THE ERCIM WORKSHOP ON CSCW AND THE WEB, 'Online! 7 - 9 February 1996, XP002160544</p> <p>St. Agustin (Germany)</p> <p>Retrieved from the Internet:</p> <p><URL:http://orgwis.gmd.de/projects/W4G/proceedings/groco.html></p> <p>'retrieved on 2001-02-09!</p> <p>the whole document</p>	<p>1-4, 8-11, 13-16, 19-28, 30,31</p>
A	---	12,29
X	<p>GALL U ET AL: "Promondia: a Java-based framework for real-time group communication in the Web"</p> <p>COMPUTER NETWORKS AND ISDN SYSTEMS,NL,NORTH HOLLAND PUBLISHING. AMSTERDAM,</p> <p>vol. 29, no. 8-13,</p> <p>1 September 1997 (1997-09-01), pages 917-926, XP004095291</p> <p>ISSN: 0169-7552</p> <p>page 921, left-hand column, paragraph 2</p> <p>-page 922, left-hand column, paragraph 3</p> <p>figures 3,4</p>	<p>1-3,10, 19, 21-25,30</p>
X	<p>MULTIMATE.NET, INC.: "The World Wide Web Just Became The Town Square with Instant Rendezvous from multimate.net"</p> <p>WEB PAGE, 'Online!</p> <p>17 August 1999 (1999-08-17), XP002160545</p> <p>Retrieved from the Internet:</p> <p><URL:http://www.messagevine.com/news/pr_1_99_11_00.htm#Aug171999></p> <p>'retrieved on 2001-02-07!</p> <p>the whole document</p>	<p>1</p>
L,X	<p>ARORA A: "Goovey 1.0 beta"</p> <p>SOFTWHERE NEWSLETTER, 'Online!</p> <p>11 August 1999 (1999-08-11), XP002160546</p> <p>Retrieved from the Internet:</p> <p><URL:http://hammer.prohosting.com/{wherene t/archives/text/1999-08-11.txt}></p> <p>'retrieved on 2001-02-09!</p> <p>the whole document</p>	<p>1</p>

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/26856

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
L	<p>"Internet > Chatting & IRC"</p> <p>WEB PAGE, 'Online! XP002160547</p> <p>Retrieved from the Internet:</p> <p><URL:http://www.iceman99.f9.co.uk/freehome/internet/chat.html></p> <p>'retrieved on 2001-02-08!</p> <p>paragraph '0003!</p> <p>paragraph '0008!</p> <p>paragraph '0012!</p> <p style="text-align: center;">---</p>	1-31
E	<p>WO 00 79396 A (NOVAWIZ INC ;RONEN AVNER (IL); VENTURA RONEN (IL); BUBER SHAI (IL))</p> <p>28 December 2000 (2000-12-28)</p> <p>page 3, line 1 - line 5</p> <p>page 4, line 9 - line 33</p> <p>page 5, line 11 - line 29</p> <p>page 9, line 19 -page 19, line 16</p> <p>figures 2A-5</p> <p style="text-align: center;">---</p>	1-31
P,X	<p>SPRING T: "No More Solitary Surfing".</p> <p>PCWORLD.COM, 'Online!</p> <p>20 April 2000 (2000-04-20), XP002160548</p> <p>Retrieved from the Internet:</p> <p><URL:http://www.pcworld.com/resource/printable/article/0,aId,16384,00.asp></p> <p>'retrieved on 2001-02-09!</p> <p>the whole document</p> <p style="text-align: center;">---</p>	1-3, 9-19, 21-31

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/26856

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0079396	A	28-12-2000	NONE